which lengthens its genitive, lengthens its own genitive. It does so in every instance; *e.g.* we have καλλίθριξ with genitive καλλίτριχος, μικροπτέρυξ with genitive μικροπτέρυγος. Hence, in the Lepidoptera, we rightly call the family, of which *Micropteryx* is the type, the *Micropterygidæ*.

Osteolepis, though not occurring in Greek writers, is not "of questionable form," but as good a word as φιλόπολις and φιλόπατρις; and just as the latter actually forms a genitive φιλοπάτριδος, so also ὀστεόλεπις would form ὀστεολέπιδος, and the family name would be *Osteolepididæ*. Finally, it is to be remembered that the family name is not formed from a "possible" generic name, but from an existing one; so that *Ostiolepus* is out of the question, and indeed is only "possible" because there happens to be a word λέπος from which it can be derived.

I must apologize for troubling you at this length, but my fellow-workers in science are not unfrequently so hazy on the subject of classical nomenclature that there is a need for the setting forth of sound doctrine. E. MEYRICK.

The College, Marlborough, January 25.

As to the facts of word-formation in Greek, Mr. Meyrick is, as was indeed to be expected, quite right, and might have put the case even more strongly. The short forms, like πολύστομος, are much rarer than those in which the full stem is found, like πολυσώματος. They are, indeed, unless I mistake, found only with the neuter stems in -ατ-, as in δερμα(τ-), στομα(τ-), σωμα(τ-), ἁιμα(τ-), σπερμα(τ-), and appear to be a speciality of that class of nouns, where they occur beside, but not to the exclusion of, the full normal forms. There is no ground for thinking that a derivative form in *-lepos* could be formed from the noun λεπις, λεπιδ-, or a derivative in *-ornos* from ὀρνις, ορνῖθ-. **Osteolepus* and its alleged pl. **Osteolepi*, may certainly be pronounced impossible on Greek analogies; and could not even be grounded on the by-form of the noun, λέπος, stem λεπε(σ)-, since the adjective from that *-os*, -ες stem, would necessarily end in -λεπης, -λεπες. As, therefore, *Osteolepid-* is the stem of the noun, the name of the family, on Greek analogies, is necessarily *Osteolepid-idæ*.

But I do not myself think that it is *always* necessary to conform to Greek analogies; I think that the convenience of English needs is also to be considered. In *Osteo'lepis*, *Osteo'lepi'didæ*, I think English needs are fairly answered; but it is not always so; some formations of the kind are hardly pronounceable, or when pronounced, through shifting of accent, presence of mute letters, pronunciation of *c*, *sc*, as *s*, and the like, do not in the least suggest their meaning.

Indeed, I think it very desirable that the Linnean and other learned Societies should establish a Committee of Nomenclature, who should consider every new name proposed, and pass or reject it, after taking into consideration not merely etymological correctness of formation, but what I think far more important, capability of being pronounced, distinctness from other existing names, and fitness for yielding derivatives, if needed. I entirely disagree with the notion that every discoverer of a genus has a right to confer a *name* upon it which he himself has never considered how to pronounce. I have had occasion repeatedly to ask inventors of such names, how they pronounced them, and have more than once been told that they had never thought of that, only of getting the Greek form right, and that I, forsooth, must settle the pronunciation! Such men were, of course, utterly unfit to confer names, however eminent as scientists. Every name that does not lend itself to a distinct and easy pronunciation, or which, when pronounced, is undistinguishable from some other word spelt quite differently (*e.g.* words in *cœno-*, *cæno-*, *sceno-*, *seno-*, &c.), ought to be rejected. Better invent new words off at the ground, having *no etymology*, than put together Greek roots in combinations unsuitable for modern mouths and modern ears. Why must modern knowledge be confined within the swaddling-bands of a nomenclature 2000 years younger? J. A. H. MURRAY.

Oxford, January 28.

Compounds of Selenium.

IN your issue of the 23rd ult. (p. 284) you insert a paragraph describing experiments by M. Chabrié on compounds of selenium. While fully acknowledging the value of his work on the phenyl derivatives of selenium, I think it right to state that much of M. Chabrié's investigation has been anticipated by Mr. F. P. Evans and myself as long ago as 1884; and that several of his assertions are incomplete and incorrect. The tetrachloride, $SeCl_4$, as we then showed, exists in vapour as such between 180° and 200°; with rise of temperature it dissociates, but even at 360°, dissociation is incomplete. In our paper (*Trans. Chem. Soc.*, 45, 62) the progress of the dissociation is followed.

We do not agree with M. Chabrié's suggestion that the products of dissociation are the other chloride, Se_2Cl_2, and chlorine, for the very good reason that Se_2Cl_2 itself is an extremely unstable body. Instead of, as he asserts, having a constant boiling-point at 360°, it begins to boil at 145°; and temperature rises to 173°, while a mixture of Se_2Cl_2 and $SeCl_4$ distils over, leaving a residue of selenium. The vapour-density of Se_2Cl_2 was found by us apparently normal; but this is caused in reality by the fact that it also dissociates completely on vaporization into selenium and chlorine without change of volume, according to the equation $Se_2Cl_2 = Se_2 + Cl_2$.

A revision of the experimental work of previous investigators is obviously to be desired; but it should be undertaken as a revision, else inaccurate conclusions may be drawn from incomplete work, as they have been in this case.

Perhaps I may be allowed to take this opportunity of inquiring by what reaction selenophenol, C_6H_5SeH, is produced from the red oil, $Se_2(C_6H_5)_3C_6H_4Cl$, out of which it is said to deposit on standing? WILLIAM RAMSAY.

University College, Gower Street, February 3.

Royal Victoria Hall and Morley Memorial College.

I HAVE only just read the article on Polytechnics for London in your number for January 16 (p. 242). I hope it is not too late to offer a few words of comment on it. Nothing is said of that part of the Commissioners' scheme which applies to the Royal Victoria Hall and Morley Memorial College, probably because the amount intended for them is comparatively small—£6000 down for structural alterations, and £1000 a year to be divided between Hall and College. But it derives an importance beyond what is due to the amount of the grant, from the fact that it is no castle in the air, but a going concern, and had begun its useful life long before the Commissioners had planned their scheme. Moreover, many of your strictures do not apply to this particular part of it. You say there will be, under the new scheme, "no People's Palaces—only *Young* People's Institutes." You object to limitation of age, and to smoking being forbidden, and you conclude by urging most truly that "life should come first, then buildings," for life develops from within.

May I therefore, in as few words as possible, give an account of the history and present position of the Hall and College, with the object of showing that the truths you urge have been already laid to heart?

The Hall (formerly the "Old Vic." Theatre) was opened 9 years ago as a temperance music hall, to compete with the degrading attractions of ordinary music halls, about which there was less stir in those days than now. At first we had variety entertainments every night, but before long the experiment was tried of introducing something better on certain nights. There is no need to enter into the ups and downs through which experience was gained; suffice it to say that we still have "variety" pure and simple on Saturdays, when our gallery boys, as well as well as their elders, enjoy themselves to their hearts' content, to the number of 1800 or so; and a modification of this kind of entertainment takes place before a much smaller audience on Mondays and Wednesdays. But on Tuesdays (as your readers know from the occasional notes which appear in your paper) we have popular illustrated lectures from many of our leading scientific men, who continually express their gratification at the appreciative attention of the audience. On Thursdays we have ballad and operatic concerts, at which (interspersed among operatic selections) tableaux, representing scenes from operas, are given. And on Fridays there are temperance entertainments.

All this will be left unchanged by the new scheme; and is not this something very like a "Palace of Delight"? Smoking is and will be freely carried on (except in certain parts of the house on concert nights), and anyone, without distinction of age, can come in by payments ranging from twopence on Thursdays and Saturdays, and from a penny other nights.

But this is not all. A little more than four years ago, classes were started in the unused dressing-rooms at the back of the stage, in response to a demand for more systematic instruction from some of those who had attended the lectures. The first

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class began with four students, but soon the number was as great as the rooms could conveniently accommodate, and excellent work was done in spite of many inconveniences, one of the greatest of which was the impossibility of excluding the sounds of the entertainments in the Hall. From time to time *soirées* were held, and the students informally consulted as to what additional classes they wished for. Where a demand existed, every effort was made to obtain the supply.

Then came the offer of the Commissioners to meet a subscription with an equivalent endowment, and the freehold was bought, in memory of one of the truest friends of the work, Mr. Samuel Morley. Finally, the waste space which had been occupied by dressing-rooms and stores of old scenery was cleared of its dangerous wooden staircases, a sound-proof, fire-proof wall was built to divide it from the theatre, and large convenient class-rooms were built; and on the last day of September the Morley Memorial College was opened, for working men and women; Miss Goold (the well-known head of the Queen Square College) having consented to take the office of Principal here also.

Already there are 680 students on the books. Many criticisms may be made on the arrangements, but no one can say that there is a want of life in the place. The builder's men are hardly yet out of it, and the fittings are at present of the scantiest (the result of want of funds, for the delay in passing the Commissioners' scheme through Parliament has caused unlooked-for and very embarrassing delay in the receipt of the help expected from that quarter) but the enclosed prospectus will show ample signs of life. Admission to the gymnasium, smoking, and recreation rooms can only be gained by *bonâ fide* attendance on at least one class, a rule which the Committee consider very important, and which they adopted in consequence of their experience with a club which met at one time in some of the old rooms belonging to the Hall. No new students are admitted under 17, for the simple reasons that it does not answer to mix boys and men, and that the boys are provided for by the Recreative Evening Schools Association; but there is no limit of age at the other end. When the Borough Road Polytechnic is started, the College will probably take those students who want advanced literary and scientific teaching, excluding "technological classes," for which neither space nor funds would suffice. In fact, the College will be in all probability the advanced branch of the Polytechnic. At all events, it is intended that the two institutions should play into each other's hands and avoid overlapping.

You say most truly that life develops from within. I would go further, and say that "*omne vivum ex vivo*" is as true of moral and social as it is of organic life. No institution can grow and flourish unless life has been given in its service, and this is emphatically the case with that of which we are speaking. To mention names would not interest outsiders, and to those who have watched the Hall from its very beginning, nine years ago, it is well known whose heart work as well as head work has been devoted to it and kept it alive through its troubled infancy. This it is which has drawn other workers to help in doing what one alone could never accomplish, and given spirit to the whole. They have allowed life to develop from within, watching for what was practicable instead of airing preconceived theories, and this is why so little has had to be done twice over. Help of all kinds is greatly needed, for the concern is only in its early childhood yet, but one thing is certain—whatever wants have to be supplied and defects remedied, this is *not* an "architectural white elephant." Probably that could never be true of any institution which had so much heart as well as head devoted to it, but let those who doubt come and see for themselves!

February 5. A MEMBER OF COMMITTEE.

Galls.

IN NATURE of November 28, 1889 (p. 80), Prof. G. J. Romanes speaks of galls as "unequivocal evidence of a structure occurring in one species for the exclusive benefit of another," and states that "it is obvious that natural selection cannot operate upon the plants directly." Nevertheless, there is one way in which galls may be supposed to have been evolved as beneficial—or rather, less harmful—to the plants. Every farmer is aware of the great loss to vegetation caused annually by larvæ of insects boring within the branches and twigs of trees. Now suppose that all internal plant feeders were originally borers or leaf-miners—and this is highly probable,—but that some had a tendency to cause swellings in which they fed. These latter would be less injurious to the plants, and the greater the vitality of the plants the more nourishment for them; and so by degrees the globular and other highly specialized and least harmful galls would be developed, by natural selection, for the benefit not only of the insect, but also of the plant. And known galls, which I need not here enumerate, furnish us with all the steps of this evolution. T. D. A. COCKERELL.

West Cliff, Colorado, U.S.A., January 23.

Foreign Substances attached to Crabs.

THE Compound Ascidian referred to by Dr. R. v. Lendenfeld in yesterday's NATURE (p. 317) is one of the Polyclinidæ, and probably a new species. It belongs to the genus *Atopogaster*, and is closely related to *A. informis* (*Challenger* Report, Part ii. p. 171).

I have before me now five good specimens of the crab and Ascidian (the crab in this case is *Dromia excavata*, Haswell), dredged in Port Jackson, and sent by the Australian Museum, Sydney; they measure as follows:—

Specimen.	Crab (greatest diameter). cm.	Ascidian (length, breadth, and height) cm. cm. cm.
A	4	10 × 8 × 5
B	3·5	10 × 6 × 5
C	2·5	8 × 6 × 5·5
D	2·5	6 × 6 × 5
E	2·5	5·5 × 4·5 × 3

In the largest of them the Ascidian seems to be quite twenty times the size of the crab.

I notice in these specimens that the last pair of thoracic legs in the crab, which are much larger than the preceding pair, are turned up dorsally, and are so firmly embedded and attached by their sharp claws in the test of the Ascidian that it is easier to disarticulate them than to loosen their hold.

To those who dredge much round our coasts, a crab covered with foreign substances is no unusual sight. Specimens of *Hyas* are often found so overgrown with Algæ, Sponges, Zoophytes, and Polyzoa that almost the whole of the body and legs is hidden, and the animal is scarcely recognizable except by its movements. W. A. HERDMAN.

Liverpool, February 7.

The Ten and Tenth Notation.

IT is no doubt difficult for anyone to really conceive enormously great or infinitely small quantities. This difficulty is, however, much minimized by the ten and tenth notation. Indeed, if systematically used, I believe one's mental power of estimation would be practically perfect. But is it so used? I have before me three books—I only take this as an example of what frequently occurs—in which Joule's equivalent is given is—

$$\left.\begin{array}{l} 42 \times 10^6 \\ 4{\cdot}2 \times 10^7 \\ 0{\cdot}42 \times 10^8 \end{array}\right\} \text{respectively.}$$

B. A. MUIRHEAD.

Pall Mall Club, Waterloo Place, S.W., February 8.

P.S.—The natural uniform notation, at any rate for text-books, seems obvious.

EARTH TREMORS FROM TRAINS.

AMONG the writings of those who love to speculate on the future of our planet there is probably somewhere (though we have not had time to discover it) an essay on the cosmical changes which man will be able to produce in the earth. The data for solving this problem are striking. In a few centuries man has acquired all those powers over large and solid objects represented by his knowledge of explosives, and his use of steam. Multiply the centuries, and with them the history, by convenient figures (a familiar process in this kind of problem) and there is no reason why the earth's axis of rotation should not be shifted considerably by human agency.

For the present, however, we are concerned with a more

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